442
182 /438/ The more inflexible the raw material is from which our Indian manufactures his possessions, the more convincingly apparent are the creative and organizing power of his spirit, his keen gift of observation, and his dexterity. Repeated attempts must have preceded the shapes and the individual pieces chosen for the permanent store of possessions of this tribe and retained by many generations. If we examine each individual item, its extreme appropriateness in every respect becomes so clear that we realize hardly anything can be improved to any extent which would at the same time also increase the efficiency of the object. By itself the object looks poor and artless, but if you see how it is applied and used and with what little effort it functions very accurately, you cannot refrain from marveling at its merits.

178 If we compare the accounts since the middle of the nine-
● 411 teenth century with the reports from the first two centuries in
231 which Europeans and Yamana came together, it is apparent that a change has taken place in the utilization of individual objects. By this I do not mean that European goods, such as knives and axes, have been taken over, but that bow and arrow were gradually superseded by the sling. The real reason for this -- to mention the point already -- seems to be the introduction and swift adoption everywhere of the dog. The dog serves the Indian in various ways in his hunt for otter. We know that it is not easy to aim accurately with bow and arrow from a canoe. I have frankly expressed the opinion that only after the Europeans discovered the Yamana did the dog become their inevitable companion, which is how travelers have designated this animal since the middle of the last century. Aside from this small change, all the things that are used daily have been preserved in their original form until the present time.

176 The implements and weapons of our Fuegians cannot be too thoroughly investigated and observed in their use. They reveal a gift of creative invention in these Indians, who have been wrongly underestimated and so often pitied as the "most miserable people." Yet they have created tools for themselves which make it very much easier for them to obtain food and to protect their bodies.

/461 cont./

2. Bow and Arrow

411 No one seriously doubts the fact that the Selk'nam are joined, so to speak, to their bow and arrow (Vol. I, 230). The significance of this weapon for the Yamana, however, is usually underestimated or completely misunderstood. I suspect that in former times these things played an important role, and historical accounts substantiate this. Anyone looking over the oldest travel accounts finds that the bow and arrow are mentioned at least as often as other weapons and implements, with the exception of the bark canoe.

/462/ In the first drawing of the Yamana for which we are indebted to L'Hermite (Fig. 10 /Ed., see foreign text, untranslated portion/), bow and arrow appear in the foreground, whereas spears are in the background. Decker mentions the former first and only later the "long javelins" (p. 52 /untranslated/). Among the material possessions of the inhabitants of Orange Bay, J. d'Arquistade saw, only "some bows and arrows and some mother-of-pearl necklaces" /translated from French/ (p. 56 /untranslated/). Later George Forster (a):382 even maintained of the Fuegians near Isla Waterman: "Bows and arrows were their only weapon." Fifty years later, in December, 1823, Weddel (a):110 bartered, among other "trifles," bows and arrows with the Indians in Seno Año Nuevo. "The bows were mostly three feet, eight inches long and made out of a smooth, firm, flexible wood. The bowstring is seal skin or plaited gut. The arrows are made of hard wood and are well polished, 25 inches long, and have a triangular pointed stone forced in at the tip. When the arrow penetrates something, the wood can be pulled out, but the stone sticks fast." In April, 1830, some seven years later, Murray reported to the English fleet commander, King:429, that the natives of Bahía Windhond had as weapons "fish spears, bows, arrows, and slings" /cited in English/. Shortly thereafter Fitz-Roy (a):184 submitted the following description: "These arrows are of hard wood, well polished, and quite straight. They are about two feet in length, and in a notch at the point have a sharp triangular piece of agate, obsidian, or broken glass. The bow is from three to four feet long, quite plain, with a string made of twisted sinews" /cited in English/. Almost at the same time Webster:I, 184 lay at

/462 cont./

441 anchor in Bahía San Francisco at Cape Horn, and there he met a few Fuegians. Their weapons were "slings, bows and arrows. The latter are neatly made, and pointed with obsidian. Their bows and arrows are employed for the destruction of birds" /cited in English/ (p. 111 /Ed., see foreign text, untranslated portion; the passage referred to is in English/). Wilkes:129 speaks of these weapons, though not in detail; actually he bartered for them among our Fuegians and to this day there is a bow stave in the Peabody Museum in Salem, U.S.A. Colvocoresses:40, however, who was a lieutenant serving under the commander mentioned above, says emphatically that "their arms consisted of bows, arrows, and spears" /cited in English/ (p. 119 /Ed., see foreign text, untranslated portion; the passage referred to is in English/) (159).

> 159. Cooper:208 admits that "some of the explorers who visited the Yahgans in the earlier part of the last century found them in possession of the bow and arrow" /cited in English/. His qualification, "but it was not common," does not seem correct to me.

441 178 [477] When, toward the middle of the last century, the Anglican missionaries made their first contacts with our Fuegians, bows and arrows had by no means disappeared, but were somewhat less prominent. For example, in March, 1864, Stirling traded for them with European articles (VSA:XI, 227; 1864) and Bridges (j):314 mentions them repeatedly (160). /463/ Later, however,

> 160. When he (k):239 speaks of the Kina ceremony, in which the men threaten the women with their various weapons, this does not mean that the bow at that time had become merely a plaything of the men.

they were used progressively less, and the members of the Mission Scientifique ran across them only very occasionally. As Hyades (q):360 and (h):34 frankly admits: "They are actually very rarely used" /translated from French/. Nevertheless, Martial: 192

/463 cont./

411 178 maintain that "the Yahgans who live in the region east of the Beagle Channel also use the bow and arrow to hunt guanaco" /translated from French/, whereas, according to Hyades (q):200, they were used in the central region to hunt birds (161). The

> 161. "These arrows are used very little at Orange Bay, the Fuegians say that they are sometimes useful to them in killing birds" (Ibid.) /translated from French/.

Italian expedition under Bove that traveled through these regions in the following year saw neither bow nor arrow. Spegazzini's private complaint (o):162 prevailed also among his companions, namely, that among the Fuegians "the bow and arrows are well known to them, but I saw no one carrying such instrument" /translated from Spanish/. Luck was so little with Lovisato (s): 198 and (c):721 that he cried in despair: "The Yahgan... have neither bows nor arrows; on the contrary, I found no one among these people who knew how to make an arrow point for me" /translated from Italian/ (162). On my four trips I made a point

> 162. He (b):137 describes these weapons in detail as unique among the Selk'nam; he also mentions that they are used by the Halakwulup, but not by the Yamana. Compare Krickeberg: 218.

of asking about bows and arrows, but not a single specimen was in existence. Similarly, Lothrop (b):155 was unable to find out anything about them.

411 From these communications and reports, which could be amplified with innumerical details, we may deduce the undeniable fact that this Indian tribe actually used bow and arrow. The conditions of our natives have been investigated much too little in the past centuries, and for a long time European ships anchored only a few days in individual places in the south and east. From the existing travel accounts one might conclude that these weapons were used more often in the east and less in the central regions,

/463 cont./

[41] and, without thinking about it, that they were generally absent in the west (162). This could certainly not be justified, for the

> 162. For example, Dabbene (b):185 maintains, without justification, "The bow and arrows were used solely by the Yahgan who inhabit the coasts of Beagle Channel, and it appears that they were never the preferred weapons" /translated from Spanish/.

adjoining southern Halakwulup always had bows and arrows. Without offering definite proof, therefore, no one can maintain that the western Yamana between the central Yamana and the Halakwulup did not know about these weapons. In former times a foreign fleet almost never visited the homeland of the western Yamana. It is true, however, that the people of the east carried these weapons more often than the rest of their countrymen, who usually bartered for them with the Selk'nam who were their only neighbors. Bows and arrows were also more suitable than other /464/ implements for hunting the guanaco which lives only in the eastern Beagle Channel and throughout Navarino Island.

[71] Finally, it can be proved that since the discovery of the Yamana the use of the bow and arrow constantly decreased, until finally, at the end of the nineteenth century, not a single remaining specimen was to be found in their possession (164).

> 164. Lothrop (b):188 also acknowledges this to be the actual fact of the matter.

a. The Bow

[41] [71] From the start, to prevent justifiable surprise, we should like to emphasize that all three Fuegian tribes make their bow and arrow in exactly the same way. There are slight differences only in minor details. These weapons are the most important and almost the only ones of the Selk'nam, which is why we have given a thorough description of them elsewhere (Vol. I, 130).

/464 cont./

•411 The bow and arrow of the Yamana, however, merit a separate description.

To our regret, only four genuine specimens have been preserved from the older cultural heritage of the southernmost Fuegians. These will be dealt with primarily in the following description. For the bow stave, known as wíjana, wájana, [124] wájana, they use, without exception, the wood of an Antarctic beech, almost always Nothofagus betuloides (165). As a whole

165. Immensky Hyades (Q)/29b maintains that the Yamana use the wood of Maytenus magellanica for the bow stave. Actually this is almost absolutely inflexible.

the bow is somewhat shorter and also somewhat thinner than that of the Selk'nam. This explains why it has a greater curvature which is said to increase the propelling power of the string. The bow is scraped until the diameter of the center piece is 22 millimeters at the most. From the center which shows a roundish, almond-shaped transverse section, the bow stave tapers in both directions and terminates in short blunt ends. The distance in a straight line between these two ends varies between 120 and 160 centimeters, according to the general terms used by Martial:193.

411 114 The ethnographic collection of the University of Göttingen is justifiably proud of owning two bow staves which reached Europe through James Cook's second expedition. One of these belonged for a time to the private collection of the naturalist Reinhold Forster who, with his son George, took part as a scientist in that circumnavigation of the earth (166). /465/ These rare

166. These accounts permit us to draw a conclusion as to the origin of the two bow staves. As is known, Cook's fleet spent about a week toward the end of December, 1774, at Isla Wasserman in the Paso de Navidad, during which time they were twice visited by the native Fuegians (p. 87 /untranslated/). When they sailed on, the fleet was becalmed in front of Bahía de

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Buen Suceso, and on December 29th the captain sent a boat to shore there. The lieutenant was "received by several inhabitants" when he disembarked among them. George Forster (a):II, 390, adds: "Our men stayed with them only two or three minutes, embarked again, and hurried back on board" (Vol. I, 36). Now it is hardly to be assumed that in this short space of time the sailors were presented with two bows by the native Haus or Selk'nam. It seems much more plausible that at least the bow stave in the private collection of Forster was taken by the latter himself from a Yamana on Isla Waterman, for he refers to this weapon in particular in his report. This probability is confirmed by the fact that the other objects in Göttingen that Cook brought back from his second expedition are characteristic specimens from the cultural heritage of the southernmost Fuegians. I refer to three bone spearheads, small necklaces of mussel shells, and a sling whose center section was made from a scrap of leather from the otter. The Selk'nam, as is well known, use only guanaco leather for their sling (Vol. I, 243).

specimens are 149 centimeters and 152 centimeters long. Lothrop (b):156 publishes a photograph (unfortunately too indistinct) of two bows which are also old and are in the Peabody Museum of Salem, "one the gift of Captain B. Morrell, Jr., who obtained it in 1825, the other collected by Lieutenant Wilkes, probably at Orange harbor or Wollaston island" /cited in English/. The straight-line distance between the two ends is three feet, nine and one-half inches in the case of one, and four feet, one inch in the case of the other.

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The details we have mentioned are characteristic of the bow stave of the Yamana as well as of the Selk'nam. The latter, in addition, shows a distinct fluting which, for handwork, is notably regular. It is lacking in the two old pieces in the Peabody Museum, as Lothrop (b):156 emphatically points out, nor do we

/465 cont./

411 171 find it on the specimens in the Göttingen Museum. This point may seem trivial, but actually the early Yamana were not as exact in making a bow stave as the Selk'nam. That is why they never applied the fine decorated edge upon which the Selk'nam laid great stress (Vol. I, 233). It has been proved that the inhabitants of Isla Grande gave many a bow to their neighboring canoeists. However, since the old bow staves described here lack the even and delicately ribbed surface, they are almost certainly recognizable as a genuine product of the Yamana. The latter have actually altered nothing in the form and shape of their bow staves for the past three centuries (167).

167. Hyades (q):361 confirms "that the bow and arrow of the present does not seem to have varied from that of the first European travelers in Fuegia" /translated from French/. In his works (h):31 and (q):Plate XXXI, he illustrates a bow that Bougainville picked up in Puerto Gallant on the Strait of Magellan in January, 1768. There is no question that this specimen comes from the Halakwulup. Since, as Hyades maintains, it "does not differ in any respect from the present bow" /translated from French/ of the Yamana, his words substantiate what I said in the beginning about the widespread uniformity of the bows of all Fuegian tribes.

411 283 For the bowstring, the people in the region of the Selk'nam and Haus without exception use the thick tendon cords from the legs of guanacos. The eastern Yamana do likewise; the other groups choose for this also thick bundles of tendons of the [177] pinniped; the westernmost Yamana, probably in imitation of the Halakwulup, even use the hide of the sea lion in a strip three millimeters wide (168). On the two bows which James Cook

168. Hyades (q):298 inaccurately says that "the string is a sealskin thong or a cord of a whale sinew" /translated from French/; the tendon fibers of large seals are used much more often.

283 /466/ brought back the bowstrings are now missing. Of the two
411 in the Peabody Museum Lothrop (b):156 says that their "bowstrings are of guanaco-sinew" /cited in English/ (169). The latter,

> 169. In a few older reports they are erroneously said to be "gut."

known as sáli, are attached exactly as they are on the bow of the Selk'nam, namely, at one end by means of a running knot and at the other by being wound around it several times (see Fig. 31 in Vol. I, 231). A strip of leather as a bowstring is obviously much less elastic.

β. The Arrow

411 The navigators of earlier times repeatedly saw the arrow in the hands of these Fuegians, but instead of describing it in detail, most of them were content to mention it briefly. Weddell noted few details. The arrow of the Yamana also resembles that [171] of the Selk'nam in every respect; the latter is in general somewhat longer. Lothrop (b):155 calls it "short, clumsy, and untapered -- very crude indeed compared with Ona workmanship" /cited in English/. As far as I know, there is not an arrow preserved anywhere from olden times, and the available descriptions from the last decades are more or less inadequate. For whatever I have been able to discover about this at one time significant weapon, I am indebted chiefly to old Whaits, who, as a young man, made a few samples of them. Personally I did not succeed in seeing an arrow made by the hand of a Yamana.

Here, too, as on Isla Grande, they choose the small stems [824] of Berberis ilicifolia, sometimes even the branches of Maytenus 411 magellanica for the arrow shaft. Hence it is also called ʔiyakuʔ, 322 a name for the latter tree. The stick, still green, is given its final shape by constant scraping with a sharp-edged mussel shell. The middle third bulges slightly in contrast to the two ends. The high polish and final smoothing of the surface of the shaft is obtained by a gentle rubbing with pumice. Before that the man repeatedly straightens it by holding it between his teeth and

/466 cont./

411 322 elastically bending the parts that stand out. Painstakingly and carefully he must now cut a notch at either end; the one for the arrowhead is deep and sharp-edged, the other shallow and rounded. This is accomplished by means of protracted rubbing and filing with a small splinter of sandstone or with the rough edge of a mussel shell.

411 324 Slate, as well as quartz, is found in various places on the Cape Horn Archipelago, and both kinds of stone are used for the arrowheads, known as čkēna, inix, yēlkus. Slate is the easiest to work. The Indians choose a suitable small slab of stone, and, scraping it on a fine-grained piece of sandstone, they try first to obtain the desired triangular shape with the sharp edges on both sides which converge in a flat point. Afterwards they carefully fashion the perfectly rectangular tang. /467/ These points always turn out to be small. Their total length is about 30 millimeters, seven millimeters of which apply to the tang; the largest distance between the lateral corners is around 15 millimeters (Fig. 32).

Sometimes the arrowheads of quartz (170) are a little

170. Fitz-Roy (a):139 speaks in general of "arrows headed with obsidian, agate, or jasper" /cited in English/, which is more or less correct.

longer, and the base of the triangle is a slightly curved arch. In order to achieve this and to fashion the necessary tang, the Yamana (171) proceeds exactly as does the Selk'nam. He hangs

171. Wieghardt: 26 erroneously believes that "the Ona make these points, because the Yahgan do not know how to work either glass or obsidians" /translated from Spanish/.

a soft /Fig. 32 appears here/ scrap of leather over his left palm and with this he grasps the suitable stone splinter with thumb and index finger. While he works he rests his left fist against his thigh. His right fist grasps a small blunt stick of bone which he

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places on the edge of the little piece of stone, and by exerting strong pressure with slight turning, he gouges out tiny shell-shaped splinters very close together. In other words, he presses off fine flakes, little by little, from the entire piece until the desired shape is achieved. The upper and lower surface are easier to work because larger splinters can be broken off; it is much harder to shape the tang exactly. For the last few decades broken glass has been used instead of quartz; it can be worked much more easily and even more quickly.

On my second expedition I gave old Alfredo a piece of thick bottle-glass and asked him to make a dagger point nine inches long, with the usual triangular shape and the adjoining tang. He was particularly pleased when, under the pressure of the little bone stick, the tiny particles of glass chipped off with a crunching sound. To my surprise he finished the beautiful point in 55 minutes, without having hurried unduly. He confessed: "To make a point of quartz of the same size for an arrow, a capable Yamana needs a whole /468/ day." Nowadays, [177] instead of the customary small bone stick, they use a thick iron nail or an iron awl (172),

Fig. 32. Arrowheads of Slate, Bone, and Flint. Natural size.

172. Hyades (h):34 and (q):360 mentions that "the Fuegian Jakaif simply cut the glass which was to form the point by scraping a piece of window glass with a knife. When he did not have glass he used a fragment of stone (flint)" /translated from French/.

411 /468 cont./
[177] introduced by Europeans.

Our Yamana have the lead over the Selk'nam in that they even use bone for arrowheads. The proportion of these to slate and quartz arrowheads can no longer be determined (173). They

173. In any case it is an unjustified generalization when Lothrop (b):156 maintains: "The arrowhead was of bone, cut to the Ona pattern with two barbs" /cited in English/.

also have the triangular shape, but the adjoining tang is wide at the top, between the two lateral corners, and tapers downward. The triangle itself is about 33 millimeters high, whereas the tang is 13 millimeters long. The little teeth on both sides are filed with the fine edges and individual splinters of sandstone. These sides are not sharp since they are slightly rounded; hence these bone points are effective because of the force of the thrust rather than because of their edges which are dull (Fig. 32).

The tang of the points mentioned above is set into the upper notch of the arrow shaft, without being cemented in. They are merely wound tight with a damp thread of sinew which, when dry, gives the desired rigidity. This thread of sinew would be too weak for a bone point. Hence the latter is held in the notch with a narrow strip of leather and by means of much tight lashing. The natives from the start know that now and then the shaft of the arrow will slide off while the bone point remains stuck in a wounded animal.

411 Finally, at the opposite end, feathers are added after the
237 model of the Selk'nam arrow. They prefer the hard wing-feathers of the cormorant. "On either side of this extremity they fasten a feather, the quill of which has been split and tied on by means of a fine lashing of bird gut (174) which passes at almost

174. Alfredo assured me that for this lashing the sinews of otter or sea lion are particularly suitable.

uniform intervals between three or four barbs of these small
411 feathers. The feathers are so well attached that one would think

/468 cont./

411 there is only a single one" (Hyades [h]:37) /translated from French/. Both wings of this feathering are exactly perpendicular to the shaft and opposite each other. The feathering extends almost down to the lowest notch and is altogether about 25 millimeters long, whereas the entire arrow is about 70 centimeters.

411 177 Today we are no longer able to find out in what quantities our Yamana took over arrowheads directly from the Selk'nam; it did actually happen. Not only did the old men assure me of this, but in the piles of shells on the eastern Beagle Channel we find such points made of obsidian which are rare in central areas and almost entirely absent in the west. Whether the stimulus for making this characteristic /469/ form of the arrowhead was transferred from the Yamana to the Selk'nam or vice versa remains a question which cannot be solved in this context alone, but which is not without some significance.

γ. The Quiver

281 411 Obviously the Fuegian arrows are delicate constructions, and they are carefully stored. The most durable quiver is made of the leather of pinnipeds; the one of otter leather is more highly valued because it is more beautiful. Martial:192 mentions only the latter. The quiver is a longish, narrow bag, with a loop sewed to the upper part to serve as a handle. To achieve this shape, the natives cut a long rectangle out of leather, place the two longitudinal edges together and sew them up. For the bottom they set in a small oval piece of leather, which is also sewed on. The quiver is always slightly longer than the arrows so that they will not stick out and break off; it is about 15 centimeters wide. Each individual arrow is slid into the quiver with the point downward. When one is needed, the end of the shaft is grasped between the feathering with the tip of the thumb and index finger and immediately placed on the bowstring.

411 [171] This brief description also fits perfectly the quiver of the Selk'nam (Vol. I, 240), which, however, is a little longer and wider. The eastern Yamana are familiar only with this one of leather, whereas the people of the central area and the west not infrequently make a quiver out of two moderately curved pieces of

/469 cont./

411 bark, into which they also set a narrow bottom piece of bark. They sew up the edges with strips of wood fiber or whalebone, like those of a water scoop made of bark (Fig. 30). Naturally, this quiver, which, like the one of leather, is called hilix, is less resistant and durable.

It need not surprise us that not a single one of the earlier navigators, nor a visitor from more recent times, with the exception of Martial:192, mentions the quiver, the latter being subsidiary to bow and arrow. Even the arrow is not mentioned by many. The illustrations of bow, arrow, and quiver given in Volume I, 231, 239, and 240, could, without objection, also be used for these implements of the Yamana. With the exception of minor details, they show in general what these objects were like among the southern Fuegians. Formerly there were plenty of men capable of making these things for their own use.
[439] It is also undeniably certain that the eastern Yamana obtained them through barter from the neighboring Haus or Selk'nam.

They are very serviceable in hunting on land as a long-range weapon against guanaco. For this they are not excelled by any other weapon of the Yamana. On the other hand, it is not easy to manipulate them in a rocking canoe, /470/ and from this vantage point a practiced archer can use them effectively only against otter. A person on land has a better chance to catch birds with the sling and the snare, and sea lions with the club. Moreover, the Yamana do not like to go far from the coast. It is only in cases of particular necessity that they push deeper into the woods where none of their weapons would be easy to manage.

224 441 In view of local conditions, we realize that the bow and arrow cannot be recommended for general use and that it is really suitable only for hunting guanaco. The range of this animal, however, ends with the central Yamana. In view of this, the bow and arrow were used most of all in the east and less in the west where the guanaco is wholly absent. Here these weapons were largely used for hunting otter, and this explains why, with the progressive adoption of the dog, they lost importance. These changes in the economy of the Yamana cannot be discussed until later; they deserve attention for several reasons.

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3. The Small Harpoon

225 411 For nourishment the Yamana are almost as dependent on pinnipeds as they are on mussels. Fortunately these animals lie about on the rocks and islands in large herds and cross the individual channels in all directions (p. 38 /untranslated/). The hunter goes after them with his small seal harpoon (Fig. 33). I use this term to distinguish the weapon I wish to describe here from other similar specimens (175).

175. Lothrop (b):152 describes this weapon as consisting of "a heavy shaft and a detachable head joined to the shaft by a thong" /cited in English/.

411 313 [824] The small harpoon is a powerful missile, and for this reason the shaft must be long, heavy, and absolutely straight. For it, almost without exception, the wood of the evergreen beech (Nothofagus betuloides) is chosen, since its trunk usually has a very regular shape and the younger trees have sound wood for a long time. It takes a good eye to find a suitable trunk; it must be flawless if the weapon is to function dependably. It is troublesome to fell the tree. A ring of bark a hand's breadth wide is cut out just above the ground. Then, with a shell knife or a sharpened mussel shell, the layers of wood fibers are scraped off, one after the other, until the incision is deep enough. The running knot of a long strap, wusúkesa, is thrown into the high branches and pulled tight. Then a man swings from it and, aided by his own body weight, tugs until the incised portion breaks through. He immediately cuts off the upper part with the crown in the manner described above, /471/ and he now has a trunk about four meters long lying on the ground. /Fig. 33 appears here./ To cut the suitable piece out of this is a no less protracted and arduous task. The man is aiming for the middle third between the pith and the bast zone. He splits off almost half of it with the bone wedge, tukalapēna (Fig. 26) and with a suitable stone as hammer; he has to split the remaining piece lengthwise a second and third time. Finally, by carefully peeling off in splinters the

/471 cont./

411 part that remains, he lifts out the core (Fig. 34). These 313 layers of wood are neither too flexible nor completely stiff, but are slightly springy and absolutely sound.

Through endless scraping with quartz splinters, 411 sharpened mussel shells, or the knife, enough of the 322 long pole is whittled off so that it is about 25 milli- [342] meters in diameter and precisely octagonal. Attention is given to this because of a definite esthetic feeling, but also the edges make it possible to grasp the shaft more firmly and safely. The shaft tapers gradually toward the bottom and terminates in a blunt end. On top they carefully cut a notch 12 centimeters deep. For the final polishing of the shaft, it is rubbed with pumice, hiyal, very uniformly and with gentle pressure. To the end the shaft (176) is from 2.80 to 3.10 meters long.

176. Weddell (a):96 has furnished an exact description: "Their spears consist of firm bone, are seven feet long, sharply pointed, and have a barbed hook on one side, four inches from the point which... is fastened to a wooden shaft ten feet long and smooth and straight. A shorter or longer strip of skin is fastened to the bone." Snow (a):II, 15 supplements: "Their spears were about 12 feet long, made of hard wood, octangular, but about half an inch thick and one inch broad, tapering at one end to a point, and the other end to a butt" /cited in English/.

Fig. 33. Small Harpoon.

/471 cont./

411 313 In July, 1923, I asked old Walter to tell me exactly how the shafts for harpoons and spears were made in former times. He invited me to take a walk through the nearby forest at Punta Remolino. My faithful friend and dependable guide, the Selk'nam Indian Toin (Vol. I, 116) also joined us. Walter examined many beech trees with a sharp eye, and it took some time until he finally decided to cut down a suitable one. He used an iron ax, but showed both of us the former procedure which was incomparably more arduous. On our way home he emphasized several times that only the piece he had cut out had the required characteristics, and that the shaft must vibrate well when grasped in the middle. If one chooses other layers of wood, he has to worry about the shaft's bending or warping after repeatedly becoming wet.

411 321 /472/ The other part of this harpoon is the bone point with a single large tooth. For this one selects that portion of a whale rib that has the least curvature. The superfluous ends are taken off with sandstone by a long filing process (177). The piece of bone

177. Nowadays they use iron tools. Despard observed that with regard to the whalebone the Yamana "chop with axe, then cut with knife, then scrape with muscle /sic/ shell, then burnish with smooth stone" (VP:VI, 52; 1859) /cited in English/.

is shaped by pushing it back and forth with light pressure over a flat sandstone. When the curved edge of the back and the upper point are finished, a notch about ten centimeters long is cut into the lower third. This notch must then be finished off with a barb pointing downward. The whole process is nothing more than /Fig. 34 appears here/ endless grinding and filing with narrow pieces of sandstone and pumice. It requires a long time and much patience, for the bone tissue is extremely hard. The lower end, a rectangle about six centimeters long and three centimeters wide, is wedge-shaped. The sides of this tang are purposely left somewhat uneven so that it will fit more securely into the notch. A length of about 22 to 40 centimeters and a width of about 36 millimeters are the measurements most frequently observed for

/472 cont./

441 321 these large bone points of the small harpoon. Sometimes one of them will turn out somewhat unsymmetrical or bent to one side when the natural curvature of the whale rib could not be completely obliterated by grinding. The lower /473/ jawbone, iseska, of the whale is most highly prized. It can be made into a very hard and quite symmetrical point which also has a more accurate aim (178).

178. Bridges (k):14 mentions: "Points for lances are made from the jaw of the whale" /translated from Spanish/. On the subject

[322]

Fig. 34. Diagram Showing How a Shaft is Cut Out.

of making harpoon points, Hyades (q):355 makes the more general statement that "the Fuegians use a bone of the whale or sometimes a seal bone, but the bones of whale are preferred" /translated from French/. Earlier Snow (a):II, 361 reported: "Their principal spear-heads are entirely constructed of hard bone, and are about seven inches long, finely pointed, with a barb on one side four inches from the point" /cited in English/.

/473 cont./

411 284 This large bone point requires a two-fold fastening, if we may express it thus. Its tang is pressed into the open notch of the wooden shaft. Since it is wedge-shaped and the notch is narrow, it is jammed in tightly. In spite of that, a narrow strip of leather, tuwarárum, is wrapped around it about nine times. This strip has previously been well soaked and is tightly lashed, whereupon the free end is knotted. When it dries, this lashing is even more constricted and becomes all the more secure. There is by no means a special attempt to secure the spearhead in the notch; in fact, they expect it to slide out at the proper moment. Hence a second fastening is intended to keep the spearhead joined to the shaft and freely movable. Over the tang of the bone spearhead, that is, around the lower part of the notch, they place a leather strap of sealskin about 12 millimeters wide and knot it. The other end is knotted securely on the wooden shaft itself, not more than 70 centimeters from the notch. The strap is not taut, and they purposely let it hang loosely. Before the spearhead is pressed into the notch, the strap is twisted around its longitudinal axis until it is rolled up lengthwise and has a strong tendency to unwind. It is kept from doing so as soon as it is secured at the top. Sometimes this short piece of strap hangs flat and loose.

411 225 Only now is the weapon ready for the hunter to use. It is surprisingly functional. Since it is hurled, the heavy wooden shaft gives it ample force. When the bone point has penetrated the body of a seal or related animal, the latter immediately tries to shake off the burdensome foreign body. In one way or another the spearhead will detach itself from the shaft. Immediately the latter will twist somewhat slantwise and will keep on turning in the water until the rolled-up strap has uncoiled itself. The strap was purposely fastened, not in the middle part of the shaft, but on the upper third. After the shaft has detached itself from the spearhead, it does not stand exactly at right angles, but at a more or less acute angle from the direction in which the animal strains forward. This averts the danger of its snapping and yet acts as a considerable brake. Sometimes floating algae get tangled up in the shaft and the thong, which notably increases the resistance in the water. The wounded animal is seriously hindered in quick flight or deep diving, and the successful hunter can

§ [For the harpoon.— Analyst.]

/473 cont./

411 225 easily overtake it. If it flees into a floating /474/ cluster of algae, the dragging shaft will inevitably get tangled up, and the exhausted animal will certainly fall into the hands of its pursuer.

Extraordinary ingenuity has invented this weapon and perfected it. It works with surprising certainty.

4. The Large Harpoon

What we have just discovered about the working principle of the small harpoon also controls the missile that I call the large harpoon (Fig. 35): the wounded animal must not escape the hunter who has just delivered a piercing blow. The two weapons differ only in a minor factor, which, however, furnishes brilliant testimony of the keen power of invention of the Indians. Earlier observers speak about the harpoons, but the way in which they safely and easily deliver the booty into the hands of the Indian is nowhere described. It is this which reveals the great efficiency of these weapons.

In most of its details the large harpoon is like the small one, and the latter can be transformed into the former with a few manipulations. Above all, the shaft, for which the hard wood of the evergreen beech is chosen, must be altogether even and about three meters long. If it were bent only the slightest bit or otherwise defective, there would not be sufficient certainty of hitting the target. In general our natives do not handle their implements very cautiously or carefully, but every man treats his missile weapons with care and a certain amount of attention. He places them as upright as possible beside his hut, and in the canoe he lays them safely in the bow section so that they do not warp. The wood for the shaft is taken out of the concentric layers [824] of a younger Nothofagus betuloides in the manner shown in Figure 34.

411 824 Earlier accounts of this are inaccurate and incomplete. Anyone who knows the various species of Fuegian wood will never agree with Hyades (h):24 and (q):362 that the trunk of Drimys winteri (p. 28 /untranslated/) is also suitable for the harpoon shaft. The situation is different with the young trunks of the Fuegian cypress (Libocedrus tetragona), Ilpaix, which always

/474 cont./

411 824 grow perfectly straight and have the great advantage of being heavy. They do not flourish on Beagle Channel, however, except in one or two places in the west (179), and for most of the Yamana they are simply inaccessible. Hence one sees all of them carrying merely a shaft made from the evergreen beech, Nothofagus betuloides, which is uniformly octagonal. Furthermore, one can /475/ observe as the average cross-section a rectangle of about 35 millimeters in width and 28 millimeters in height with the four /Fig. 35 appears here/ corners removed, producing the octagonal form. Shafts with six uniform sides are not as common as those mentioned above.

[137]

179. On my fourth expedition I had definite proof of specimens of Libocedrus tetragona in Puerto Edwards on the southern shore of Brecknock Peninsula. This is the southern boundary for this species. Skottsberg (g):28 suspects that it extends somewhat farther south, namely, to Isla Chair in Darwin Sound.

411 225 The narrow slit at the upper end of this large harpoon is, of course, also meant for a bone point which is jammed into it; a narrow leather strip is

[384]

Fig. 35. The Large Harpoon.

/475 cont./

411 225 wound around it tightly in about ten close lashings. If one of the pinnipeds is to be harpooned, even if it is the mighty male of the sea elephant, kétaxowa (Macrorhinus leoninus) (Fig. 9 /Id., see foreign text, untranslated portion/), the hunter chooses a bone point of medium length with a single large tooth or the still shorter one with two large barbs (Fig. 36) (180). The latter

180. Hyades (1) 354 mistakenly maintains: "It is very rare to see harpoon points in bone, movable, with a notch on either side in the form of a spearhead" /translated from French/. This form is no less frequently made and used than the medium-sized and very large bone point with a single tooth.

measures about 15 centimeters. Under their thick leather skin the above-mentioned animals carry a thinner layer of fat than whales do under their epidermis, but the bone point is supposed to penetrate as deep as possible into the muscular layer where the two lateral teeth function more precisely as barbed hooks. This is also the reason why a bone spearhead more than 40 centimeters long with a sharp tooth is preferred for harpooning whales. A shorter bone point would, for the most part, stick fast in the layer of fat and therefore be almost ineffectual.

225 411 284 The thing that conspicuously distinguishes this weapon from the so-called small seal-harpoon is a long leather rope of 20 or more meters. It is evenly cut from the freshly skinned hide of a pinniped and is always left rolled up. One end is securely fastened to the notch /426/ of the spearhead. From here it is drawn down along the shaft and held there with two or three loose cross-loops. In aiming and throwing, the man holds the shaft approximately in the center, and the wreath of coiled rope hangs on his left forearm (181). /Fig. 36 appears here./ When he has hit the animal,

181. Snow (2) II, 361 says: "To the bone is attached a string/hide of various lengths. In using the spear, they hold it nearly by the middle, and with the right eye cast along it, they dart it with great precision" /cited in

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/476 cont./

English/. Bove's (e):158 description is more accurate.

the bone point and the shaft remain attached for a time, but it is much more disadvantageous for the wounded animal if it must drag along the loosened shaft which moves irregularly. With beating movements of the rope -- that is why it is attached to the shaft with cross-loops -- the man succeeds in detaching the shaft from the bone point that is stuck in the animal. Then he gives the animal as much rope as possible; after it has grown tired or lost a great deal of blood, he draws it toward him slowly and gently, at the same time easily rolling in the rope.

Fig. 36. Twin-barbed Harpoon Point. Two-thirds natural size.

It hardly seems possible that the man can to such an extent influence the direction taken by the escaping seal with the loose shaft which is directly beside the harpoon point sticking in the flesh. Even if one or the other of the cross-loops on the shaft should be loosened or shift, the shaft never stands at right angles, but at an acute angle to the direction of movement. This prevents it from breaking when the wounded animal violently strains forward.

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The hunter usually throws off this weapon as soon as he is on firm ground. If he uses it while he is in the canoe the greatest caution is required, especially when a whale has been wounded with it. After the animal has been hit with a lucky thrust, some men succeed in leaping on shore or on a rock while holding onto the end of the long leather rope or wrapping it around their body. Now they have a firm foothold and the canoe is out of danger. Sometimes the canoe can get close to the wounded animal and another person gives it the fatal stab. With the long leather rope of this harpoon several men may even pull a floating dead whale to shore.

/476 cont./

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Despite the fact that they are very similar, the large harpoon and the small harpoon are somewhat different. The virtue of both lies in their /477/ movable bone point (182). The longest that is

182. That is why Hyades (c):263 and (h):24 describes them as "movable harpoons" /translated from French/, and Dabbene (b):184, concurring, calls them "harpoons with a movable point" /translated from Spanish/.

ever made is placed on the small harpoon and then again on the large harpoon when a whale is attacked. With this the men strive to inflict a deep wound.

5. Javelin and Spear

Besides the missile weapons with movable points, the Yamana also uses those with a fixed point. The former I call harpoons; among the latter I distinguish the javelin from the spears. The javelin also consists of the octagonal shaft described above, *tʃia*, about three meters long, which is usually surmounted by the long bone point with one tooth, *kowaja*. Both are securely fastened. When the point is embedded in the animal's body, the shaft must not slide out, but must, by its weight, enlarge the wound and prevent the animal from escaping. The hunter uses this javelin primarily when attacking a seal that he has surprised on land or when he wishes to inflict severe wounds on an exhausted whale. This weapon is particularly suitable for that, since the shaft is heavy and the sharpened, long bone point penetrates deeply. Against smaller animals that carry a thinner layer of fat on their bodies, the two-barbed shorter bone point, *wʃiʃil*, is also reliable, or even the long-toothed bone point, *kowaja*. Although neither of them pierces deeply into the body because they are blunter than the *kowaja*, they cling sufficiently so that the dragging shaft tears open the wound and there is greater loss of blood. In other words, the javelin is most effective when the hunter is on firm ground and can put the entire strength of his arm into the thrust.

/477 cont./

411 Our Yamana use spears as fighting thrusting weapons. We can distinguish between a spear used for birds and one for fish. The shaft of the former is likewise a pole that is uniformly cut and prepared, but this is usually a young trunk of Maytenus magellanica or of Nothofagus or Drimys winteri, from which the bark has been peeled off. It is usually not more than three meters long. The thick end is cut off straight across. Here the notch is cut from one side without letting it come through to the other side. About a quarter of the diameter remains, and this serves to support the bone point which is inserted here with the back against the remaining portion of the wood. The lower part of the point has several short upright teeth. A narrow strap is tightly wound around it in the spaces between the teeth. The same shaft with the partial notch just described is also used for the fishspear, securely and firmly held in it.

411 324 /478/ The serrated points made of bone or wood are characteristic for these spears. For the bone teeth, whale ribs are used exclusively. They are first treated with coarse sandstone, then with quartz splinters or mussel shells, and finally burnished with pumice. The two edges end in a point at the top, the back is rounded off (183).

183. It cannot be definitely determined whether the Yamana made a bone point with both edges serrated. However, BD:64 mentions: "'enaia,' the single or double notched spear head used for seals, porpoises" /cited in English/. Among the Halakwulup I found the double-cowed, serrated spearhead of wood, as well as of bone, and sometimes even the two together.

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and on the opposite side the natives laboriously cut or saw out one little tooth after another with sharp mussel shells or quartz splinters. These small teeth are narrow and more or less irregular; they are close together and point obliquely downward. The little piece at the lower end is irregularly serrated and tapers; it is set into the notch and lashed.

411 223 This spear with the bone point is used for hunting birds. It is most often hurled against penguins which have tough flesh into which a wooden point would not penetrate deeply enough.

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237 This bird spear, as we might call it (Fig. 37), is perceptibly lighter than a harpoon. The fish spear is even lighter. It is the same length and must therefore be as light as possible in order to be handled easily and quickly. For the shaft, a specially selected small trunk of the evergreen beech is used. A partial notch is likewise cut into the thicker end and a shorter bone or wood point with a serrated edge is set in it. For the latter the most suitable wood is that of Berberis ilicifolia which is very tough and flexible. Hence this wooden point, Mina Tenya, has the great advantage of durability. It is also incomparably quicker to make than the serrated bone point.

Since the fish offers only a narrow striking surface, the Yamana makes use of the double-pointed spear (184). He selects a shaft that

184. Spears: He maintains that sometimes even three points were used for the fish spear, "and the barbs were all on the inside" /cited in English/. This is unknown to the rest and is reported by no other traveller. I saw such fish spears among the Halakwulup, however.

forms a wide octagon in section. He usually cuts it out of Nothofagus betuloides. At the top he cuts out two long, flat notches, opposite each other and separated by a thin layer of wood. Into each one he places a serrated bone point, and both of them are lashed and held fast with the same leather strap. The two points stand slightly apart from each other because the barb of each is curved. This considerably increases the possibility of hitting a fish (Fig. 37). /472/ /Fig. 37 appears here./ Even if the point does not penetrate very far, each tooth pointing downward acts as a barbed hook and the shaft as ballast, precluding escape (185).

185. Lothrop (V):153 also mentions a Guanaco-spear" of the eastern Yamana. I believe he bases this on doubtful reports. What he illustrates is obviously the fish spear of the Selk'nam. See Figure 40 in Volume I, Ibid.

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411 The Yamana has invented several missiles to overtake the various animals hunted, and each in its way is surprisingly efficient. He takes them along in his canoe wherever he goes and places them, ready for use, in the bow section where they stick out far above the bow. The first thing he does when game approaches is to choose the weapon suitable for it; afterwards he seizes whatever is nearest at hand, so as not to lose the booty. Aspinall:270 maintains "[the man in the canoe] three kinds of such spears with him." There are at least that many, and two or three of each kind. It is clear that the two-barbed javelin and the bird-spear with the serrated bone point have a variety of uses.

411 Every adult is capable of making and repairing 763 these weapons; they are indispensable to him for his 937 livelihood. Not everyone, however, succeeds in 554 cutting out an even shaft from the main trunk of the beech; individual men attain true mastery at this. That is why many a man will trade a good shaft for other things that he needs. Everyone always has a supply of loose points which he keeps in a longish leather pouch, yihákes. Those few men who are able to make a perfectly shaped large harpoon point are 411 universally praised (186). In conclusion it should be

186. Descriptions of these missiles are to be found in Bove (c):122, Cojazzi:109, Dabbene (b):184, Hyades (b):23 and (c):302, 353, Lothrop (b):148, Martial:191, Spegazzini (a):163, Spencer:135, Weddell (a):94, and others.

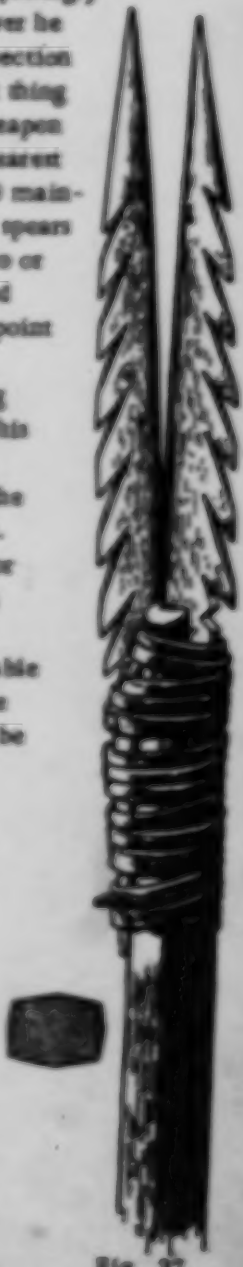

Fig. 37.
Fish Spear.

/479 cont./
[411] mentioned that the shafts of harpoons and spears are sometimes rubbed with imi. The purpose of this is to beautify them; moreover, experience has proved that they are then easier to grasp and hold with the fist.

6. Dagger and Lance

It is easy to understand that the reports from earlier times are not as accurate and comprehensive in many details as we would wish. Many observers have not discussed the difference between dagger and arrow and have identified one with the other, probably because of the great similarity between their points. /480/ Those seafarers were completely unfamiliar with the things that the shell mounds have brought to light in modern times. All the more should attention be given to the reference offered only by Weddell (a):110 in December, 1823, that the arrow should be distinguished from the dagger. After describing the arrow as "having a triangular pointed stone forced in at the front," he added: these natives "also had another weapon, namely, a similarly formed stone is fitted into the top of a handle nine inches long and probably serves as a dagger."

As a matter of fact, the Yamana use this short thrusting weapon, which can properly be designated as a dagger (Fig. 38) (187). It

[171] 187 Among the Halakwulup I often came across this weapon. From them came the four beautiful daggers with glass points which the Natural History Museum in Vienna acquired through Hagenbeck toward the end of the 1880's.

consists of a shaft as thick as one's thumb, about 30 centimeters
[824] long, for which the tough wood of Berberis ilicifolia is preferred. A stone point is forced into the completely open, narrow notch on the thicker end of the shaft. The point is secured by means of several lashings /Fig. 38 appears here/ of a small strap or thick sinew. The stone point, always referred to as yékus, has a triangular

/480 cont./

411 shape and usually an almost rectangular tang (Fig. 39); the latter is inserted into the notch. Of decisive importance is the longitudinal measurement, for it is usually more than twice as much as a point on the arrow shaft. The former does not seem suitable for an arrowhead because of its size and weight. Since, moreover, it is fastened to a short stick, I regard the designation "dagger" as suitable for this weapon. It is also handled as such. A man grasps [225] the back third of the shaft and stabs toward a sea lion that he meets on land. He attacks it from the front, never from the side, and can get close enough to it without being bitten to thrust the dagger into its neck.

For the dagger points the natives formerly chose flat lamina of [177] black slate and greenish jasper; in modern times they prefer thick bottle-glass that is more easily worked. The edges of the glass

Fig. 38. The Dagger. One-third natural size.

dagger-points cut more sharply, but become dull more quickly. Continuous splintering under pressure with a short bone stick produces /481/ the form with the sharp edges and thick point. On my [126] second expedition, old Alfredo made me a dagger with a long glass point and with a total length of 48 centimeters (188). This

188. This piece is today preserved in the Museo Histórica at Santiago de Chile. See the observations made by Hyades (q):360 with the Indian named Yakaif.

enabled me to see how it was made and at the same time to learn in detail how it is actually manipulated.

From the dagger to the lance is only a short step. Sometimes it, too, has a large, heavy point in the form of a triangle. It must [172] come as a surprise that laurel-leaf forms of the /Fig. 39 appears here/ most frequent surface-finds on Isla Grande (Vol. I, 263) have to this day been found only very sporadically throughout the broad Cape Horn Archipelago. This lance is used in the same way and for the same

[Text continues on page 172.-Analyst]

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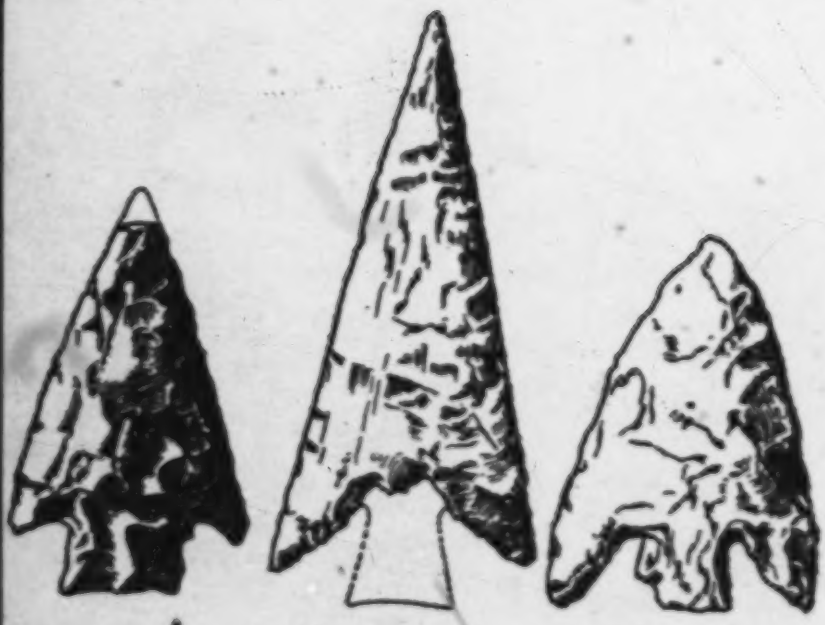

Fig. 39. Dagger Points or Lance Points.
Natural size.

/481 cont./

411 purpose as the javelin. The latter is distinguished by its bone point from the differently shaped stone point of the former, which, practically without exception, is fixed to a round, long shaft, yéyakɛr[1] (189).

189. Krickeberg: 318 designates the javelin and the harpoon as "original weapons." The Yahgan and Alikuluf /Alacaluf/ probably first took over bows and arrows, slings and bolas from the Ona. Hence bows and arrows are rather rare among the Yahgan, poorly constructed among the Alikuluf, and only the Alikuluf have bolas and understand how to use the sling well. This cannot by any means be said of the Yahgan." My observations confirm the accuracy of these sundry details.

7. The Sling

Our Fuegians use the sling somewhat less than the harpoon and lance, but nevertheless very frequently. It has the special name of táfina, and the stone hurled with it is called watúwa, wɛtáwa. The last two names are sometimes given to the sling itself. /482/ /Fig. 40 appears here./ Historical evidence confirms without doubt that since our natives have been known they have used and still use the sling. In the first report written by *A. Decker, officer of the land forces in Nassau Gulf*, in February, 1624, he lists "slings" (p. 53 /untranslated/) among the weapons of the indigenous Indians. Subsequently slings were constantly referred to in the reports. Weddell (a):94 described them in detail, and Snow (a):II, 361 even more specifically: "The Sling is made of the skin of the seal or otter. It is generally about three feet long, and of the common form: the strings are sometimes made of small gut, handsomely plaited, and terminated by knots of ingenious workmanship /cited in English/. In 1839 Pickering:19 was among these Fuegians and maintained that their weapons "consist only of slings and spears" /cited in English/. Later the

[Text continued on page 174:-Analyst]

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/482/

Fig. 40. The Sling.

/482 cont./

411 missionaries and travelers of the last few decades still found this weapon (190). I saw the natives playing with it a great deal and

190. The following have furnished good descriptions: Bove (b):156, Cojazzi:109, Colini:161, Dabbene (b):185, Hyades (h):29 and (q):301, 357, Lothrop (b):156, Martial: 191, Spegazzini (a):162, Spencer:131, Wieghardt: 25, and others.

hunting smaller animals.

171 411 If one compares the sling of our natives (Fig. 40) with that of the Selk'nam (Vol. I, 243), he will scarcely find any marked difference; actually, the construction of both is, so to speak, completely identical. For the center section the Yamana choose a scrap of leather from the otter or the seal. Whereas the Selk'nam scrape off the fur, our Indians always leave it on, often using it on the inside, less frequently on the outside (191).

191. This is shown in the drawing found in Hyades (h):30 and (q):Plate XXX, 14. Figure 40 inserted here shows the less common usage, namely, the fur-side of the center piece turned outward.

In this respect the two specimens are different. This may seem like a minor detail, but it has real significance, which old Alfredo pointed out to me. The Yamana prefer a small piece of leather that is thickly furred, since all the stones that they pick up to throw have a smooth surface, /483/ either because they are actual shingle or because they are wet with sea water. They lie considerably more securely in a furred center section than in one from which the hair has been removed. The latter can be used successfully by the Selk'nam, for they use slingstones that have a rough surface and are at least covered with a fine layer of dust. Nevertheless, some men reverse their leather lappet to put the fur on the outside.

411 The center section is a longish oval in shape, about 22 centimeters long and eight centimeters wide. It becomes extraordinarily soft from frequent use. On the pointed ends the strings are

/483 cont./

411 both attached on the same side, namely, the side without hair. Each string ends in a small knot, having first been sewed on with sinews. The strings are tightly braided with three strands of sinew. On a specimen in my collection one string is 66 centimeters, the other, 62 centimeters. Each string terminates in a small knot which is sewn into a ball the size of a hazelnut, made of otter leather. The sling brought back by J. Cook and now in the ethnographic collection at Göttingen has a total length of 167 centimeters. This is the measurement of the so-called long sling. There is also a shorter one which is used by a man in a canoe. Here he would not have firm footing and the space is too small to swing the long sling with force and without injuring the occupants.

411 223 Earlier observers left no doubt as to the use of the sling. Actually, it is used a great deal, especially in hunting birds. Colini:161 does not exaggerate when he says that "the weapon most used by the Fuegians is the sling" /translated from Italian/. Martial:191 confirms: "They more commonly use the sling for birds" /translated from French/. They hurl stones which are somewhat smaller than a hen's egg and that lie around in masses. They lay in a supply for the canoe each time before they leave.

Some men prefer to use two or three stones at once, especially if they venture a throw at a thick flock of birds standing close together. Other men are in the habit of using only one larger stone. The man places the terminal knot of the longer string into the palm of his hand between the fourth and fifth fingers, so that the string runs tight across the back of his little finger up to the leather piece; he grasps the terminal knot of the shorter string with the first /484/ joint of thumb and index finger. Then the fingers of his left hand grasp the center section with the stone, and his right hand, with a slight push, begins to turn the taut sling horizontally above his head two or three times. At the right moment the shorter string is released, the sling opens, and the stones fly out straight in front of the slinger. The more forceful the previous turning motion was, the stronger will be the impact of the stones. Some men are content with a single half-turn of the taut sling.

If the stones are to have the desired effect, they are not hurled beyond a 12-meter limit, and everyone aims at the heads

/484 cont./

223 411 of the crowded flock of birds; this may hit one or another of them and stun them. Even the Fuegian cannot hit a definite target at the same distance or farther away, since the sling is not very accurate, but it does carry a stone in a high arc to a distance of 80 meters (192). Nevertheless, we must admit, to

192. On this subject Bove (e):158 and Colini:161, as well as Lovisato (a):198 and (b):136, have grossly exaggerated. Hyades (h):32 and (q):357 protested against their assertions which literally coincide.

[526] use Hyades' (g):35 words, that the Yamana "are very skillful in manipulating them," and in the course of the day they very often use the sling just for fun (193).

193. This can hardly be more clearly expressed than Bridges has done: "The amusement these natives are most fond of is slinging at birds; they often go along the shores here with their slings" (VSA:XII, 53:1865) /cited in English/.

411 482 Naturally, our Indians must have their slings handy. Their way of carrying them is surprisingly advantageous. Most of them hang the two strings of sinew around the neck and draw the last *third of it over the folded center section, without any kind of* knotting; the ends hang down freely. With a single movement of the left hand to grasp the center section, the sling is ready to be used. At the same moment the right hand puts the stones in position and grasps the ends, ready to throw (Fig. 41). Others draw the two sinew-strings around the head, one on each side, so that the center section is in the back, and then simply loop the free ends over each other. Finally, a few of them tie the sling around their hips (194). As we have said, they put the sling

194. Fitz-Roy (a):138 noticed that "a man always carries his sling around his neck or waist, wherever he goes" /cited in English/.

/484 cont./
411 around some part of their body to have it quickly accessible at any time, but it is not regarded as an ornament (195). The
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195. Hyades (h):33 expressed the surprising view: "We must therefore admit that the sling of the Yahgan is as much an ornamental object for men as it is a weapon for hunting or war" /translated from French/.

[142 302]

Fig. 41. Man with a Sling.

Yamana use it not only to stun birds, but also in fighting against their own people.

411 /485/ All indications point to the fact that the sling was used in all parts of the Cape Horn Archipelago./Fig. 41 appears here./ Every man and boy owned and owns one. When the Mission Scientifique arrived in Orange Bay, according to Hyades (q):357, every man carried his sling. This was customary throughout the entire area occupied by this tribe. Lothrop (b):157 indulges in vain speculation about the origin of the sling and says "that the Ona had acquired knowledge of this weapon from the Yaghan" /cited in English/. I cannot agree with this view; I shall not go into his evidence and mine at this point. Instead, I take the view of Snow (b):264 that the Yamana "are remarkably expert with their slings" /cited in English/. Obviously, the fact that they own and use the sling also proves "their ingenuity" /cited in English/.

[177]

8. Snares and Fishing Implements

223 226 Our Yamana are fortunate in having a wide selection among the animals of their homeland to meet their food needs. They approach each species in a special way in order to catch them as easily and surely as possible. Besides the weapons mentioned

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Fig. 54. Long Bone Points.

/510 cont./

this fact: "It is rather curious that usually each of these natives is trained to a particular pursuit: thus, one becomes an adept with the spear; another with the sling; another with a bow and arrows; but this excellence in one line does not hinder their attaining a considerable proficiency in all the others" /cited in English/. This is actually the case.

A person who lacks something that he is unable to make because of a shortage of raw material or as a result of his own incapacity acquires it through barter with someone who happens to be in a position to dispose of it. For example, only a few men are completely successful in cutting and filing the long bone harpoon points (Fig. 54), in putting an arrow together, or in removing a wide sheet of bark for canoe building. It is inevitable that the individual will sometimes become dependent on others to a certain extent when he must fill his need for certain implements. This considerably strengthens the awareness of the solidarity of all members of the tribe.

To begin with, however, scarcely anyone would think of using the object which he happens to have for purposes of barter, since in all his work and striving he is primarily and fundamentally concerned with his own needs. He uses his own measurements as a basis. That is to say, he decides on the length and

/510 cont./

437 breadth, the particular shape of the weapon or implement, in
463 accordance with his own personal convenience, according to his bent and taste, depending on how he has practiced making it or is in the habit of doing it differently. From this arise the differences between the utensils of one man and another, between such small things as baskets, sewing work, and so forth, which one Indian woman or another will make for herself alone.

411 Because each weapon and each tool fits its maker's own hand, so to speak, it follows that each person has great dexterity in handling his own articles. /511/ Time and again their suppleness and accuracy of aim, their sure grip and controlled fist, their ability to make estimates, and their sharp eye have been justly regarded with awe and wonder by Europeans (226). It is true

226. Many agree with Bove's (g):235 judgment concerning their weapons, that the Fuegians "know how to handle them with marvelous dexterity and precision" /translated from Italian/.

that with constant practice everyone can accomplish a great deal. Many a European who has tried to use the sling or the harpoon or some other native implement has gone about it very awkwardly and become the laughing stock of the Indians.

The fact that no one owns more than one extra utensil of those most frequently needed is an indication of self-confidence. The less a person must carry around with him on his constant travels, the more comfortable it is for him and the freer he feels. It is only when want and need force him to restore the loss of an implement that he instantly and decisively sets to work. Since not even the thought of his own needs forces our Indian to make this or that object in order to have it on hand, how much less can we expect him to make anything for barter.

182 Our Fuegians procure and make their implements with little effort. They manipulate them very adroitly and steadily. They can depend absolutely on their own ability and the effectiveness of their weapons (227). What, therefore, should press and drive

227. Every careful observer will agree

/524 cont./

223 a soft whistle, the hunter instructs his wife how to steer the canoe. He observes the movements of the bird and tries to meet it suddenly as it comes up out of the water two meters or less away. The alert hunter must take advantage of the moment when the penguin, reappearing out of the water, lifts its head above the surface, and then he must thrust the spear in its body. The proximity of the boat, which frightens the unsuspecting animal, would cause it to dive again immediately. Penguin hunting shows how dependent man and wife are upon each other and how their cooperation brings success which will benefit them and their family.

[411]

Fig. 57. Bird Spear. Natural size.

β. Cormorants

No less valuable than the penguins for the hungry Yamana are the cormorants which are almost as plentiful there. These Indians are primarily interested in four kinds, namely, the Vigua cormorant, touwišiwa (Phalacrocorax olivaceus), the Magellanic cormorant, ę̄'ętex (Phalacrocorax magellanicus), the tufted cormorant, wāsę̄nim (Phalacrocorax gaimardi), and finally the black cormorant, yę̄'cx, yę̄'ę̄x (Phalacrocorax atriceps) (Fig. 58). Other species, such as Phalacrocorax verrucosus, only occasionally visit the inner channels. The meat of this type of bird is tougher and drier than that of the penguins, but the Indian welcomes it nevertheless. He also uses their bones and feathers.

One usually sees the cormorants in small groups on the water and on the beach. The hunter tries to get close enough to them so that he can use his sling successfully if several animals are standing close together. He selects

2: Cooper E-4 (no date) 1946 SH6 Yahgan SH6

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FIGURE 11.—Yahgan harpoon and pole snare. a, Harpoon assembled for sealing; b, cross section of harpoon shaft; c, position when dragging through water (length of harpoon head 10 in., or 25.5 cm.); d, two views of bird snare (diameter of loop 6¼ in., or 16.0 cm.). (After Lothrop, 1928, figs. 93, 97.)

361 621 divisional areas. Apart from initiation and other social or religious functions, which brought larger numbers together temporarily in a common camp, each biological family or small group of two or three families tended to camp apart, more frequently in the same shelter.

342 The two chief forms of family shelter were the beehive hut and the conical hut. The beehive or domed hut, the more common form, especially in the west, was circular or elliptical in ground plan, made of a framework of flexible sticks bent over dome-shape and fastened together, and covered with grass, ferns, branches, bark, skins, or anything at hand (pl. 32, *b*). The conical hut, more fre-

2: Cooper E-4 (no date) 1946 S316 Yahgan S316

415 forest from the man's. Among other more used containers were: pouches of seal or penguin skin for holding small objects; bladders or windpipes of seals or porpoises for holding ocher and firestones; crops of geese and stomachs of seals for holding oil. (Cf. others in Lothrop, 1928, p. 183.)

412 **Tools.**—These have mostly been dealt with incidentally in the preceding sections. The hafted mussel-shell scraper, mentioned above under "Skin dressing," was also the common knife. Stone-headed daggers or knives were used by the earlier *Yahgan* (Cooper, 1917, p. 207). The stone celt or ax was lacking. Wedges were of bone; arrow polishers, of a bit of pumice.

411 **Weapons.**—The characteristic weapons used by the *Yahgan* both in hunting and in fighting were the spear and harpoon (fig. 11, *a–c*), the club, and the sling. The bow and arrow, in contrast to *Ona* usage, occupied a very subordinate position.

The spear shaft was quadrangular, hexagonal, octagonal, or decagonal in section, from 8 feet (2.5 m.) or less to 12 feet (4 m.) long; the shank, ordinarily of bone, with unilateral or bilateral single or serrate barbs and with notched tang, lashed to the split or slotted end of the shaft. The atlatl was absent. The harpoon, without toggle, was merely a spear with a detachable shank tied by a thong to the shaft. The club was a plain straight heavy stick. The cradle of the sling was of hide, the lines of braided whale gut.

Yahgan bows, arrows, and quivers closely resembled those of the *Ona*—a curved self bow, ranging from about 3 to 4 feet long, with string of seal hide or of braided seal, whale, or guanaco sinew; the arrow, without foreshaft, and with triangular stemmed and barbed head of stone, bone, or, more recently, glass; the quiver, rectangular, of skin, or tubular, of bark. Arrow poisoning was absent. Both archeological and ethnological evidence suggests that the *Yahgan* most likely acquired the bow and arrow after their arrival in their historic habitat, from the *Ona*. (Cf. Bird, 1938, pp. 261–262; Cooper, 1917, pp. 211–213.)

372 **Fire making and illumination.**—The only method of fire making was by percussion with flint and pyrites, bird down or dried fungus serving as tinder. Fire was carried around in the canoe on a hearth of earth, shell, or stones. Two-pronged tongs were in use. Bark torches provided illumination. Fire was employed not only for cooking, heating, and lighting, but also for signaling, straightening arrow and spear shafts, bending canoe ribs, felling trees, preparing bark for canoes and material for baskets, and other purposes.

SOCIAL AND POLITICAL LIFE

364 **Marriage and the family.**—The sexes were kept separate after about the age of 7 and were warned by their elders against sexual liberties.

3: Lothrop E-5 (1924-1925) 1928
S116 Yahgan S116

291 Women wear rather more clothing, that is, they have nearly the whole skin of a guanaco, or seal, wrapped about them, and usually a diminutive apron. The upper part of the wrapper, above a string which is tied around the waist, serves to carry an infant. Neither men nor women have any substitute for shoes.

302 Both sexes oil themselves, or rub their bodies with grease; and daub
301 their faces and bodies with red, black, or white. A fillet is often worn around the head, which upon ordinary occasions is simply a string, made of sinews; but if going to war or dressed for show, the fillet is ornamented with white down, white feathers, or pieces of cloth, if they have obtained any from shipping. . . .

411 It is rather curious that each of these natives is trained to a particular pursuit: thus, one becomes an adept with the spear; another with the sling; another with a bow and arrows; but this excellence in one line does not hinder their attaining a considerable proficiency in all the others.

266 Before entering on the details of Yahgan life we shall dwell briefly on the charges of savagery and cannibalism made by numerous writers. As early as 1600 the Alacaluf were thought to be cannibals, for in that year Van Noort marooned on Santa Maria island one of his officers charged with insubordination, in the belief that he would die of hunger or be eaten by the savages. A quarter of a century later Jacques L'Hermite charged the Yahgan with cannibalism. In more recent years Darwin and Fitzroy have repeated the accusation on hearsay evidence, and their dictum has been widely published. However, no white man has ever witnessed the act of anthropophagy among any of the Fuegian tribes, while in recent years those who have lived with the natives and come to know them well all agree that the idea of eating human flesh is as repugnant to a Fuegian as to a European. According to Martial (p. 193) the Yahgan ordinarily do not eat dog, fox, or rat, because these animals will eat human flesh.

688 The imputation of barbarity, on the other hand, rests on firmer ground, for there are well-authenticated instances of attack by the Yahgan on European crews. The earliest of these resulted in the death at Nassau bay in 1624 of seventeen men from L'Hermite's ships; the most widely published was the massacre at Wuulyia in 1859 of the crew of the missionary schooner *Allen Gardiner*. What provoked these attacks is a secret intombed with their victims. Early voyagers habitually kidnapped natives to serve as pilots and thus aroused marked resentment. Native women often have

3: Lothrop E-5 (1924-1925) 1928
S9th Yahgan SH6

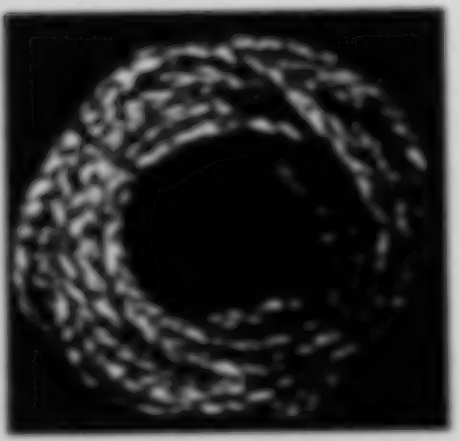

FIG. 37.—Yahgan grass rope. Diameter of coil, 35 in. (AA13647)

As a result of the exercise, the women were very strongly developed above the waist, but poorly developed in the legs.

When it was desired to make a landing the canoe was paddled in to the beach, bow-on, and the men of the family and the children stepped ashore. The wife then paddled the canoe out to a piece of kelp, mounted it, and swam ashore. As a result all the women were able to swim, while few of the men could do so.

The canoe was kept in the water habitually, because hauling it up on the beach was difficult owing to the fragility of the bark. When it was necessary to make repairs, the beach was carpeted with wet kelp to make a soft and slippery surface over which the canoe could be dragged with ease. The dugout canoes, however, were a different proposition, as for them runways were made by removing the stones (pl. xi). Stakes were driven at the head of the runways to which the canoes were tied. Canoes used habitually since the invention of the dugout may be distinguished by the presence of such runways.

FIG. 38.—Yahgan bark canoe. (After Hyades and Deniker.)

Weapons and Methods of Hunting

Yahgan weapons were the spear, club, sling, and bow. In their fashion of living, spears were almost an imperi-

FIG. 79.—Yahgan spears. a, Limpet-spear (14/2272); b, Seal-harpoon (14/2271 c); c, d, Fish-spears (14/2273, 2271 f); e, Crab-spear (14/2272). Length, 8½ to 13 ft.

Lumbroso E-5 (1924-1925) 1928
SMA Yahgan Stick

3: Lothrop E-5 (1924-1925) 1928
§205 Yahgan 5205

cast on the bow among the Ona. The use of this weapon was taught from childhood; practice in casting a headless spear, usually with an old basket as a target, was a frequently enacted sport. The basket was slung far ahead from the end of a spear; then all the young men present would cast at the target, walk up to recover their shafts, and tow the basket ahead again.

In fig. 79, drawn to scale, are shown five types of Yahgan spears, each designed for a special purpose, differing in point, shaft, and lashing. These details and certain regional variations we shall discuss at length.

1. Bird- and Fish-spear. — This spear (*shunkeiye*) is an all-purpose spear, but it was specifically intended for capturing fish and birds. It was commonly used in warfare. It may be briefly described as a beechwood shaft tipped with a serrated whale-bone head lashed in place with seal-hide or braided sinew (fig. 79, *c*, *d*).

The shaft of this spear (called *shunkeiye*) is eight-sided, as can be seen in fig. 80, having four wide and four narrow surfaces. In casting, the flat of the shaft was placed on the palm of the hand. The head of the shaft is about three-quarters of an inch in diameter; the central diameter is nearly twice as much; at the butt it tapers to a point. Red or sometimes black paint covers the completed shaft. On one side of the head-end of the shaft a slot is cut, into which the tang of the spearhead is inserted and there lashed with a seal-hide thong. This is shown in fig. 80, *b*.

FIG. 80.—Yahgoo fish-spear. Length of spear of *d*, 102 in. (34,2272, 2271)

The head of the fish-spear is cut from the lower jaw-bone of a whale. In the old days whales were plentiful in Beagle channel and the waters to the south, but since the establishment of whaling

3: Lathrop E.-S (1924-1925) 1928
5386 Tahgee 5386

(P. 150-A)

3: Lothrop E-5 (1924-1925) 1928
SH6 Yahgan SH6

stations on South Georgia,[1] some years ago, they have become exceedingly rare. During the writer's visit to Beagle channel the supply of whalebone became completely exhausted, and it was said that four years had elapsed since a whale had come ashore.

Details of the spearhead hafting appear in fig. 80. The usual assemblage is that shown in *b* where a single point has been set in a deep notch and secured there by heavy spiral lashings. Sometimes, when the presence of certain kinds of fish made it desirable, a second point was set against the side of the shaft opposite the notch and there secured by lashings of the usual kind.

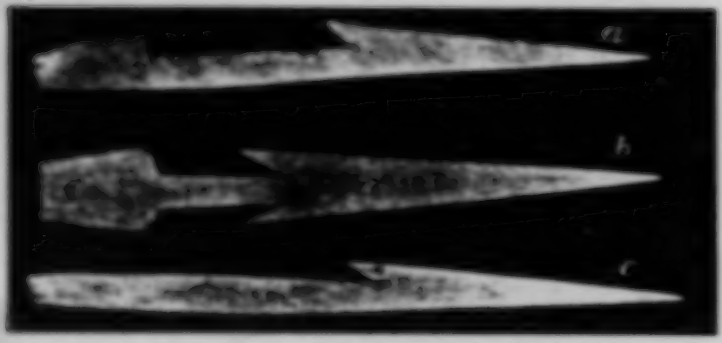

FIG. 80.—Yahgan composite, *a*, *b*, fish spearheads (14/2127, 2128); *c*, Canoeros spearpoint (14/2121). Length, 11⅛ to 12 in.

In size fish-spear heads range from six to eighteen inches, with anywhere up to twenty barbs. Eastern and central Yahgan points (pl. XII, *a–d*) have barbs along one side only. In the west this type, and also points with barbs along both sides, were used (pl. XII, *e*). Among the Alacaluf, I was informed, both single and double rows of barbs were employed. Pl. XII, *d*, shows a point made by an Alacaluf living with a Yahgan wife on Navarin island; it differs from Yahgan workmanship in the superior finish.

The tools employed in manufacturing the spearpoint were: (1) a stone hammer to secure a bone fragment of proper size, (2) a shell scraper or knife to shape the blade, and (3) a piece of pumice to polish it.

Yahgan fish-spear heads are strikingly like bone spearpoints

[1] A recent account of this industry will be found in Morley and Hodgson's Whaling North and South, New York, 1926.

3: Lothrop E-5 (1924-1925) 1928
SH6 Yahgan SH6

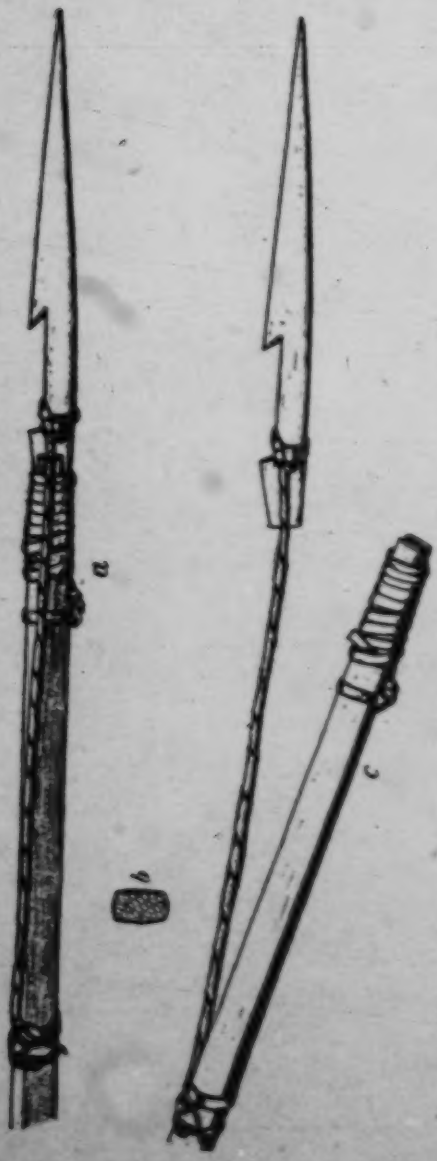

FIG. 82.—Yahgan harpoon. *a*, Assembled for casting; *b*, Section of shaft; *c*, Position when dragging through water. Length of head, 10 in. (14/2271)

discovered in late Paleolithic deposits in Europe, yet between the Yahgan and the Magdalenian peoples of Europe roll great oceans of time and space.

2. HARPOONS.—In the pursuit of seal, porpoise, and whale, the Yahgan employed a harpoon with a heavy shaft and a detachable head joined to the shaft by a thong (fig. 79, *b*).

The shaft differs from the fish-spear shaft in material and in weight: it is heavier than the fish-spear and consequently will deliver a harder blow; it is usually made not of beech but of cypress wood. Cypress grows only along the western channels of Tierra del Fuego, but in the old days the wood passed thence in trade to Beagle channel and the southern islands.

There are regional differences in the kind of point attached to the cypress shaft: in the east a single-

3: Lothrop E-5 (1924-1925) 1928
SH6 Yahgan SH6

barbed head (*awuta*) was used (fig. 81, *a*); in the west a double-barbed form (fig. 81, *b*) was employed. In both regions, however, the head had a flat-base tang with an expanded foot.

In assembling the weapon, the tang of the spearhead was inserted in a slot which ran completely through the head of the shaft, where it was loosely lashed by an encircling seal-hide thong (*tawarudru*). It was held in place by a second thong (*tawata*) tied to the tang and attached to the shaft two or three feet from the head. As illustrated in fig. 82, *a*, this thong was twisted until its length was lessened and it acted as a spring to hold the butt of the tang firmly against the bottom of the slot in the spearhead. The tension of this thong was a matter of constant adjustment, for it varied according to the wetness or dryness of the thong and even with the state of the weather.

FIG. 81.—Yahgan spearpoint case. Height, 14 in. (14/2370)

When the seal-spear had been buried in the flesh of a porpoise, whale, or seal, the point promptly pulled out of the socket and the shaft then acted as a drag, as shown in fig. 82, *c*. But owing to the fact that the thong from the shaft to the head was tied near one end of the shaft, it dragged at an acute angle, so that sufficient pressure to break the thong or the shaft was not produced. The Yahgan apparently did not employ inflated skins or bladders for this purpose.

3. GUANACO-SPEAR.—In the eastern part of Beagle channel and on Lennox and New islands the Yahgan hunted the guanaco with a special kind of spearpoint (*wuwaf*), shown in fig. 81, *c*. It resembles the seal-spear in having a single barb, but lacks the projection seen on the seal-spear's tang. It was lashed on the light hexagonal shaft of a fish-spear. This kind of weapon apparently was in use only among the eastern Yahgan, for it was unknown to Messrs. William Bridges and Fred. Lawrence. The example illustrated was obtained from a Lennox islander. To spear guanaco the animal was chased into a swamp or else the

3: Lothrop E-5 (1924-1925) 1928
SH6 Yahgan SH6

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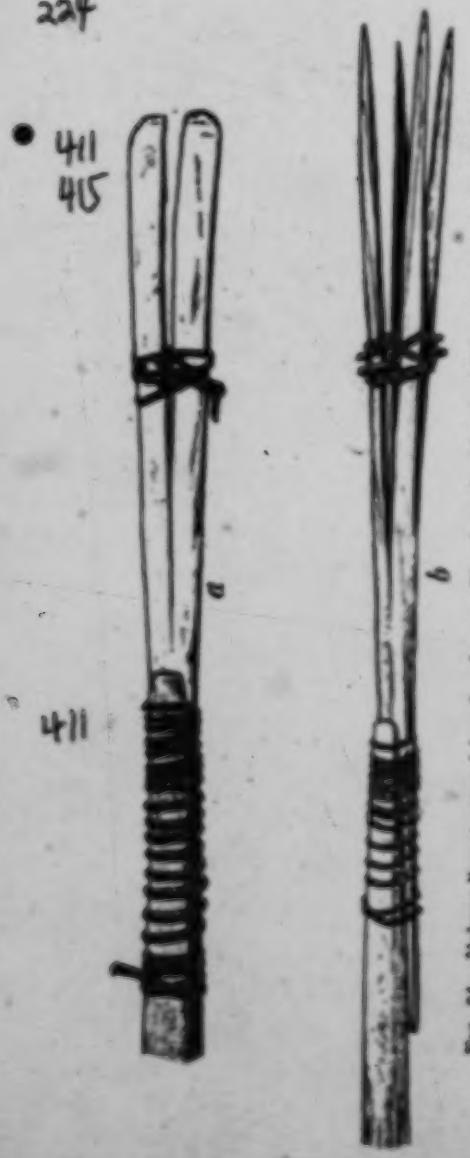

FIG. 84.—Yahgan limpet-spear (*a*) and crab-spear (*b*). Length of heads, 16½ and 19½ in. (14/2271, 2272)

hunter climbed a tree over a guanaco runway in the woods and waited there until an animal passed beneath him.

The three spear types described all had bone points, specialized in type but of approximately the same length. To carry the extra points that might be needed were the one in use to become lost, the Yahgan employed a small case made of seal-hide with the hair side inward. Old-time containers were simply a rectangle of skin folded double and sewn up the side and bottom (fig. 83). In recent years the Yahgan have followed the pattern of the Ona quiver (fig. 33) and have inserted a small oval piece of hide at the bottom of the case.

4. CRAB AND SEA-URCHIN SPEAR.—As shown in fig. 79, *e*, this spear (*akwininduu*) was considerably longer than the other Yahgan spears, for it was designed to secure crabs and sea-urchins under water.

The shaft was not octagonal like the other spears considered, but was round. It was covered with minute flutes like the Ona bow, but they were not so carefully worked.

The head of the crab-spear (*sfin*) was a piece of yellow barberry wood split at one

3: Lothrop E-5 (1924-1925) 1928
SH6 Yahgan SH6

end to form four prongs which were sharpened and hardened in the fire (fig. 84, *b*). These prongs were wedged apart with small wooden toggles held in place by a lashing of either braided grass or whalebone. The head was lashed to the shaft with a seal-hide thong.

5. LIMPET-SPEAR.—The limpet-spear (*kuúdow*) had either the fish or the crab spearshaft. It is seen with the former in fig. 79, *a*. The head (fig. 84, *a*) had but two prongs with flat, chisel-like blades. They were forced slightly apart by a small toggle.

BOW AND ARROW

In the old days, according to all accounts, the Yahgan habitually used the bow and arrow, but during the last half of the nineteenth century this weapon rapidly fell into disuse, until by the end of the century the bow had become a toy for children.

FIG. 83.—Yahgan bone arrowpoint. (After Hyades and Deniker.)

According to Fitzroy (1839, pp. 184, 187) the Yahgan everywhere arrowed birds and, in the east, guanaco. Their bows he described as three or four feet long and "quite plain." The arrows were two feet in length, well polished, and with the points so loosely attached that they remained in the flesh when the shaft was withdrawn (fig. 85).

An example of Yahgan bow which the Rev. John Williams kindly allowed the writer to examine had been given to his children several years ago as a toy. In general type it resembled the Ona bow, like which it was fluted, a characteristic due, I suspect, to contact with the Ona at Harberton. However, it was much shorter than the Ona bow, and much more curved, especially at the ends. This latter feature may have been accidental, for guanaco-sinew has a tendency to shrink for many years, and the writer has noted in museums Ona bows unduly curved owing to the increasing tension of the cord.

The arrows were short, chimney, and untapered—very crude

3: Lothrop E-5 (1924-1925) 1928
5H6 Yahgan 5H6

indeed compared with Ona workmanship. The arrowhead was of bone, cut to the Ona pattern with two barbs; but it had a long tang and was loosely attached to the shaft with heavy lashings like the Yahgan spears. Notches in the blade of the specimen illustrated (fig. 85) suggest the lithomorphic prototype seen in fig. 105, *b*.

In the Peabody Museum at Salem are two old Yahgan bows, one the gift of Capt. B. Morrell, Jr., who obtained it in 1825, the other collected by Lieutenant Wilkes, probably at Orange harbor or Wollaston island. These bows, illustrated in pl. XIII through the kindness of Mr. L. W. Jenkins, are respectively 3 ft. 9½ in. and 4 ft. 1 in. from tip to tip. Though the general outline and cross-section recall the Ona bow, the fluting typical of the handiwork of that tribe is absent. Both specimens appear to be made of beechwood, but this has become dark through age, much handling, and the application of grease. Bowstrings are of guanaco-sinew; they are attached in Ona fashion with a slip-noose at the bottom (to the right in pl. XIII) and with several turns secured by a half-hitch at the top.

CLUBS

Yahgan clubs (*hóte*) are short stout sticks, painted red when new (fig. 85*a*). These weapons were intended for killing seal on

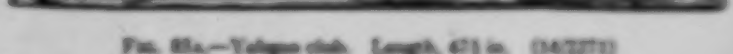

FIG. 85*a*.—Yahgan club. Length, 47½ in. (34/2271)

shore, or for killing birds at night with the aid of a torch of beech-bark (*alóiskue*). Also they were commonly used in fighting.

SLINGS

Slings (*tasiwal*) were an extremely effective weapon among the Yahgan, for some are said to have been so dextrous in their use that they often brought down flying birds. The usual sling (fig. 86) has a pouch of guanaco- or seal-hide suspended on braided whale-gut lines. The ends terminate in knots enlarged with a little guanaco wool. In discharging a stone, one knot is placed between the fourth and the little finger with the cord running across the palm of the hand; the other knot is held between the thumb and forefinger as the sling is whirled around the head.

The Alacaluf, as well as the Yahgan, were skilful users of slings, but of the Ona only those in the south had slings. At first glance

3: Lothrop E-5 (1924-1925) 1928
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[p. 156-A]

3: Lothrop E-5 (1924-1925) 1928
SH6 Yahgan SH6

411 177 it would seem clear that the Ona had acquired knowledge of this weapon from the Yahgan. However, the Ona word for sling (*shénkai*) is not taken from the Yahgan, while slings are mentioned in a supposedly ancient Ona legend. Possibly then the Ona might not have borrowed the sling from their Yahgan neighbors, but in all probability they did.

FIG. 86.—Yahgan sling. Length, 27 in. (14/2311)

BIRD-SNARES

411 Three different forms of snare were applied to the capture of birds by the Yahgan. In all of these, active prehensile function was performed by a noose of whalebone scraped thin to make it flexible. The simplest procedure was to set such a noose over a bird's nest during its absence. Also a series of nooses might be set on a cord, staked down in an open spot, and covered with suitable bait (fig. 36A). Finally, a whalebone noose was set on the end of a pole (*aárum*), as illustrated in fig. 87. With this implement it was possible to snare roosting birds during the night.

BIRD-CATCHING BY HAND

223 In addition to killing birds with arrows, slings, club and torch, and snares, the Yahgan sometimes took birds by a method which, if successful, often resulted in prodigally wasteful and unnecessary slaughter. At night a man would paddle silently to a rock where birds, preferably shags, as they are heavy sleepers, were roosting. He would steal silently ashore, and then seize the nearest bird with one hand around its wings and with the other hand pinch its windpipe so that it could neither flap its wings nor make an outcry. Then he bit off the head, placed the corpse on the ground, and went for the next bird. Thus with luck great numbers might be taken. But the steamboat duck (*Tachyeres cinereus*), a light sleeper, could seldom be captured by this method, and, if any were roosting on the rock selected, they usually gave the alarm. Fitzroy (1839, p. 184) says that the Yahgan dogs were trained to catch birds by stealing upon them as they roosted during the night.

[231]

3: Lothrop E-5 (1924-1925) 1928
SH6 Yahgan SH6

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FIG. 87.—Yahgan bird-arrow. Diameter of loop, 4½ in. (42224)

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